

REMARKS

Claims 1-12 are pending in this application. By this Amendment, claims 2-11 are amended and new claim 12 is added. Support for the amendments to claims 2-11 and new claim 12 can be found in the specification as originally filed, for example, at page 2, lines 21-22; page 3, lines 20-24 and page 5, lines 17-25; and in claims 1-12 as originally filed. Also by this Amendment, the specification is amended to more clearly conform with 37 CFR §1.71, §1.74 and §1.77 and with MPEP §608.01(a) and §608.01(f). No new matter is added by these amendments.

I. Objection to the Specification

The Office Action objects to the specification as failing to include the section heading "Brief Description of the Several Views of the Drawing(s)." While Applicants do not necessarily agree with the objection, the specification has been amended to include section headings in the interest of furthering prosecution. Accordingly, withdrawal of the objection are respectfully requested.

II. Claim Rejections

A. Claim 2

The Office Action rejects claim 2 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention. In particular, the Office Action asserts that the term "the outlet" in line 7 of the claim renders the claim indefinite. While Applicants do not necessarily agree with this rejection, claim 2 has been amended to replace the term "the outlet" with the term –the first outlet–. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. Claim 6

The Office Action also rejects claim 6 under 35 U.S.C. §112, second paragraph, as being indefinite. In particular, the Office Action asserts that the term "acetic anhydride" lacks antecedent basis. While Applicants do not necessarily agree with this rejection, claim 6 has been amended to provide antecedent basis for the term "acetic anhydride." Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

C. Claims 1, 3-8 and 10

The Office Action rejects claims 1, 3, 4, 6 and 10 under 35 U.S.C. §102(b) and rejects claims 1, 3-8 and 10 under 35 U.S.C. §103(a) over Yonggang et al., Study on Production of MCA by Anhydride-Catalyzed Chlorination of Acetic Acid, Lü-Jian Gongye (Chlor-Alkali Industry) No. 2, pp. 23-26 (February 2001). Applicants respectfully traverse these rejections.

Independent claim 1 sets forth, in pertinent part, a "process for the preparation of monochloroacetic acid from chlorine and acetic acid in the presence of a catalyst by reactive distillation." Claims 3-8 and 10 depend, directly or indirectly, from claim 1 and include all of the limitations thereof.

Yonggang teaches a method for preparing monochloroacetic acid from acetic acid using acetic anhydride as a catalyst. *See* Yonggang, Abstract. The Yonggang process is a continuous process that is conducted in a packed column reactor. *See* Yonggang, Abstract; Fig. 1; page 24, section 1.2. Based on these teachings, the Office Action takes first the position that independent claim 1 and dependent claims 3, 4, 6 and 10 are anticipated by Yonggang, and then takes the further position that independent claim 1 and dependent claims 3-8 and 10 would have been obvious over Yonggang. Applicants respectfully disagree.

Claim 1 is directed to a process in which monochloroacetic acid is produced by a reactive distillation process. By definition, distillation processes require heating a liquid to

boiling, condensing the vapors and collecting the condensed vapors. *See e.g. distillation, in Hackh's Chemical Dictionary Third Edition 283-84 (Julius Grant ed.) (attached).* The claimed reactive distillation processes integrate "the chlorination reaction and distillation in one operation" to prepare monochloroacetic acid. *See Specification, page 2, lines 29-30.*

In contrast to the reactive distillation processes of the pending claims, Yonggang does not teach a distillation process. *See generally Yonggang.* Instead, Yonggang teaches that reaction temperatures should not approach or exceed the boiling point of acetic acid (118°C). *See Yonggang, page 25, section 3.1.* Because Yonggang teaches that its reaction should be run at temperatures below the boiling point of acetic acid, Yonggang does not teach and does not suggest a distillation process. Thus, Yonggang cannot teach or suggest a reactive distillation process as set forth in independent claim 1.

Because Yonggang does not teach a reactive distillation process as set forth in independent claim 1, Yonggang cannot anticipate claim 1 and its dependent claims 3, 4, 6 and 10. And because such a reactive distillation process is not even suggested by Yonggang, Yonggang would not have rendered independent claim 1 or its dependent claims 3-8 and 10 obvious.

Accordingly, claims 1, 3-8 and 10 are patentable over Yonggang. Reconsideration and withdrawal of the rejection are respectfully requested.

III. Claim Objections

The Office Action objects to claims 9 and 11 as being dependent upon a rejected base claim. Applicants thank the Examiner for the indication that claims 9 and 11 contain allowable subject matter. Because the rejections of independent claim 1, from which claims 9 and 11 depend, are overcome for the reasons described above, claims 9 and 11 are in condition for allowance.

IV. New Claim

By this Amendment, new claim 12 is added. Claim 12 depends from allowable claim 11, which depends from independent claim 1 and includes all of the limitations of claim 11 and independent claim 1. Applicants respectfully submit that, for at least the same reasons set forth above with respect to claims 1 and 11, claim 12 is patentable over the cited reference.

V. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-12 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:

Hackh's Chemical Dictionary Third Edition 283-84 (Julius Grant ed.).

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